

FIG.1.

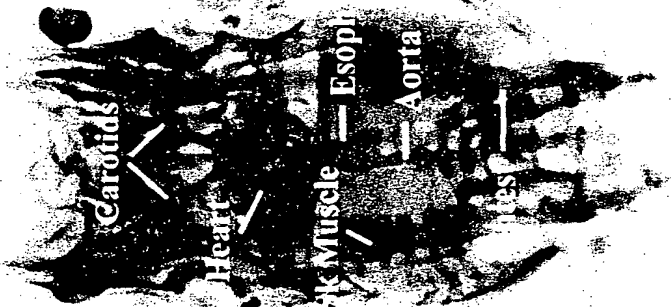


FIG. 2C

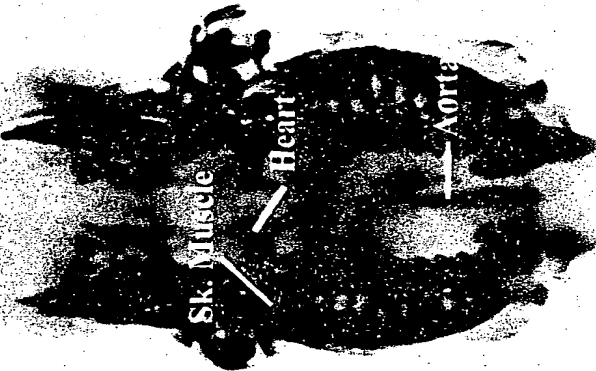


FIG. 2B

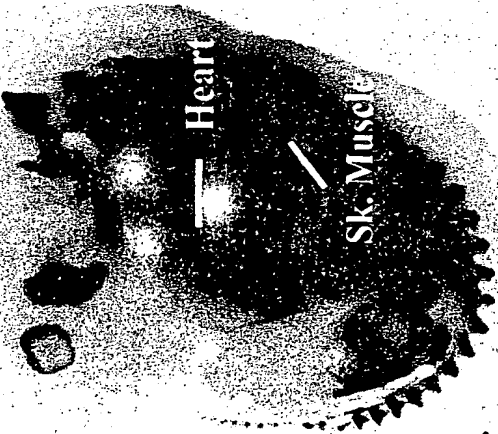


FIG. 2A

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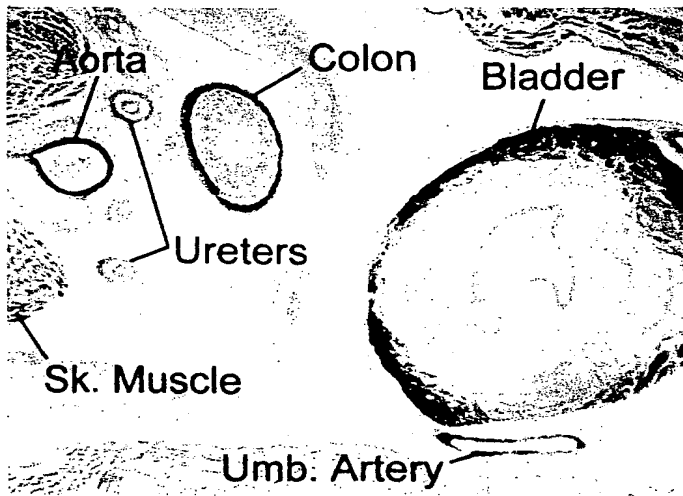


FIG. 3A

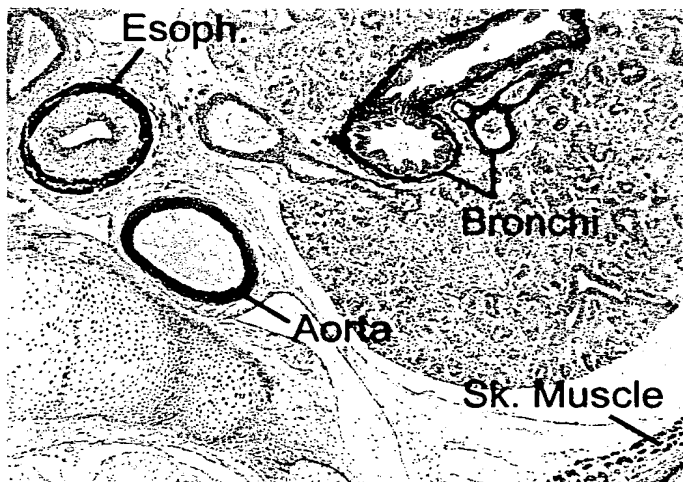


FIG. 3B

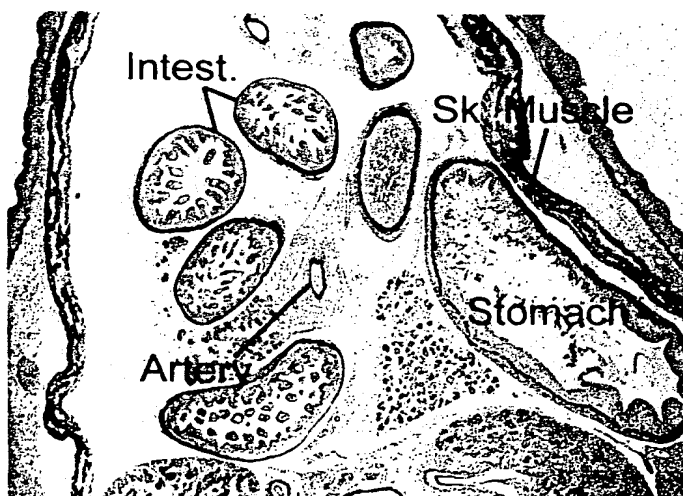


FIG. 3C

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Esoph. →

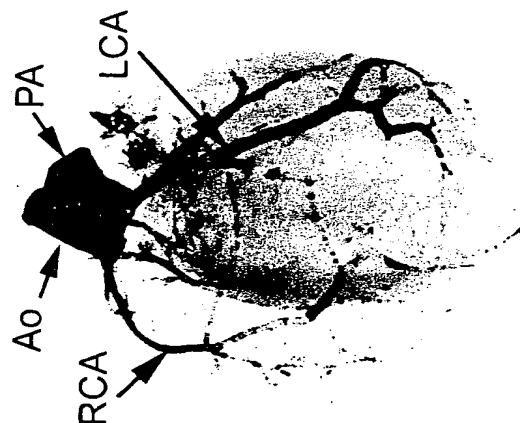


FIG. 4C

FIG. 4B

FIG. 4A

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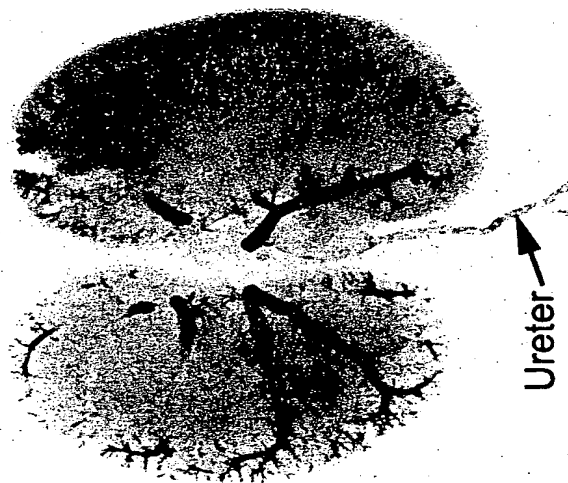


FIG. 4F



FIG. 4E

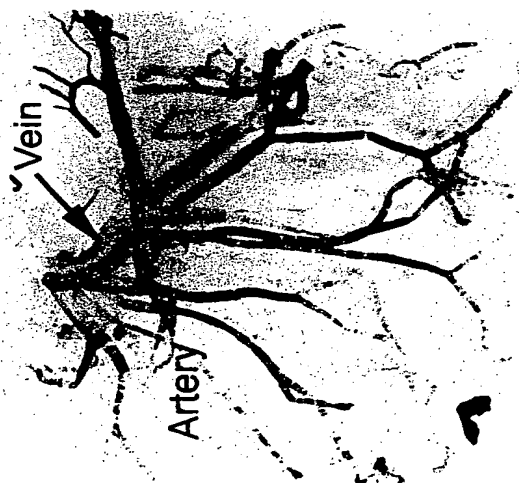


FIG. 4D

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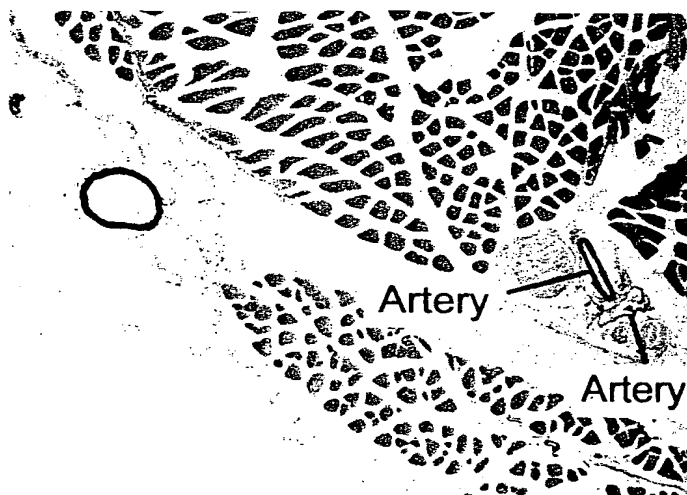


FIG.5A

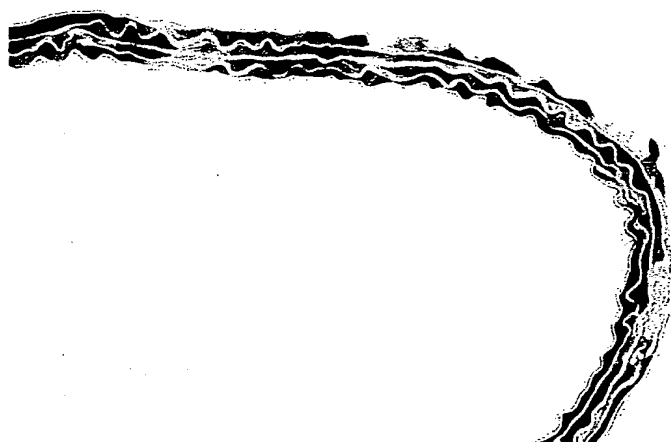


FIG.5B

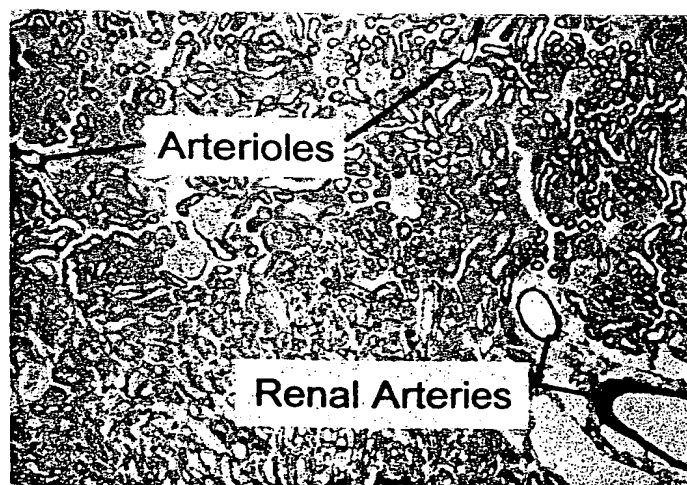


FIG.5C

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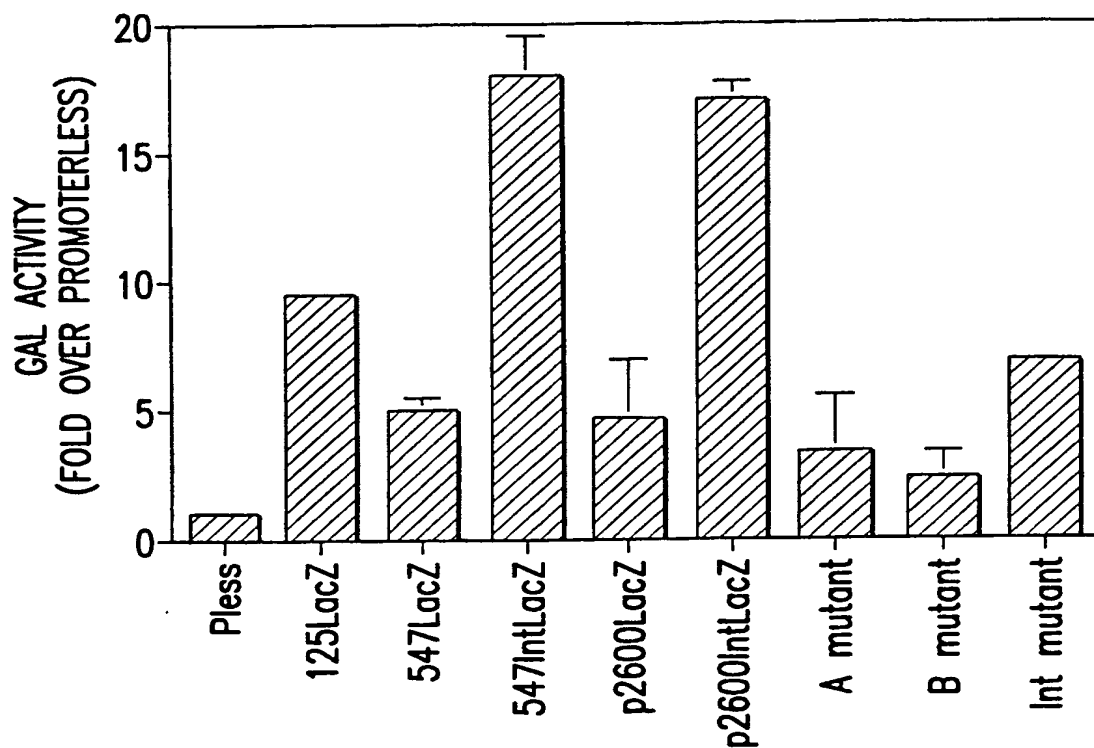


FIG.6

Int mut

B mut

Wt

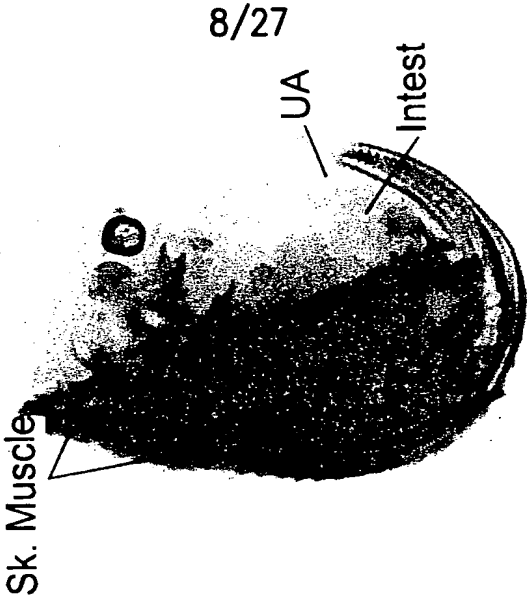


FIG. 7C

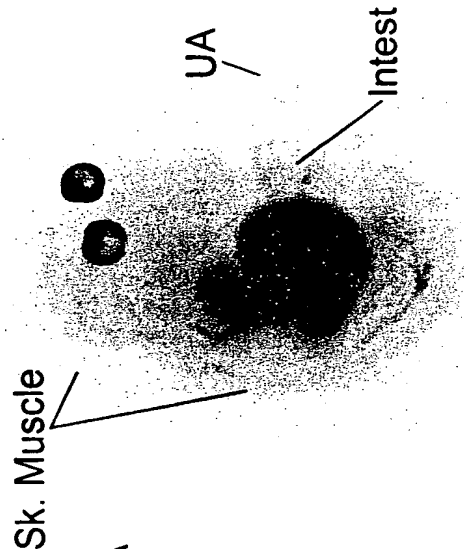


FIG. 7B

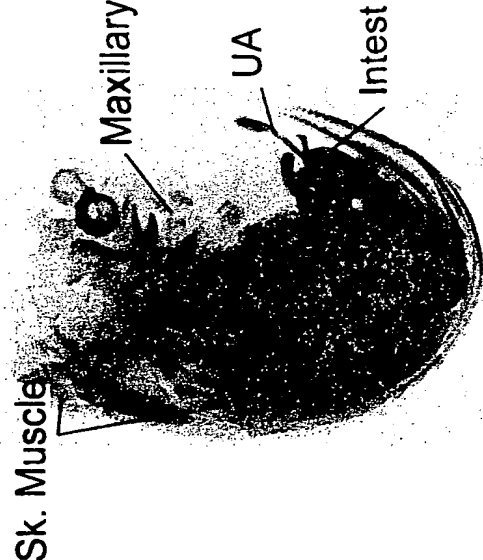


FIG. 7A



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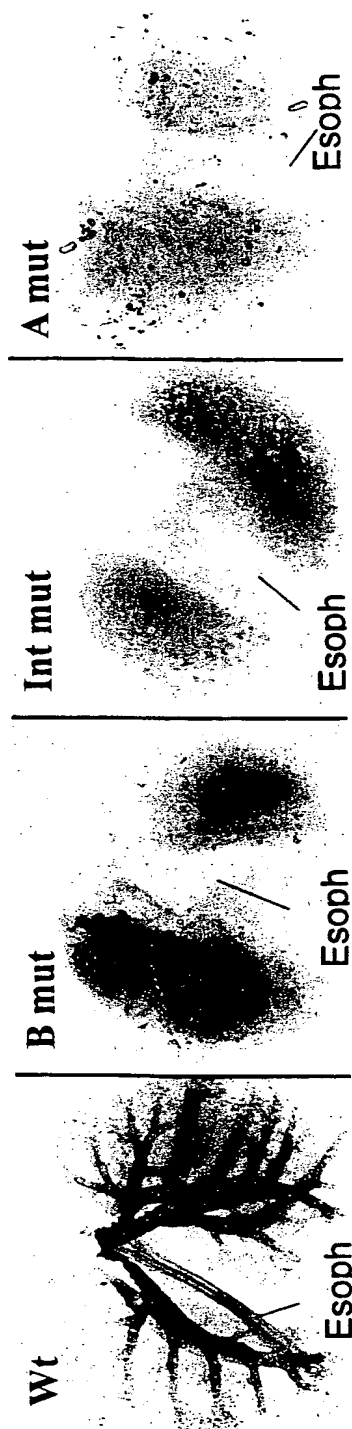


FIG. 8A

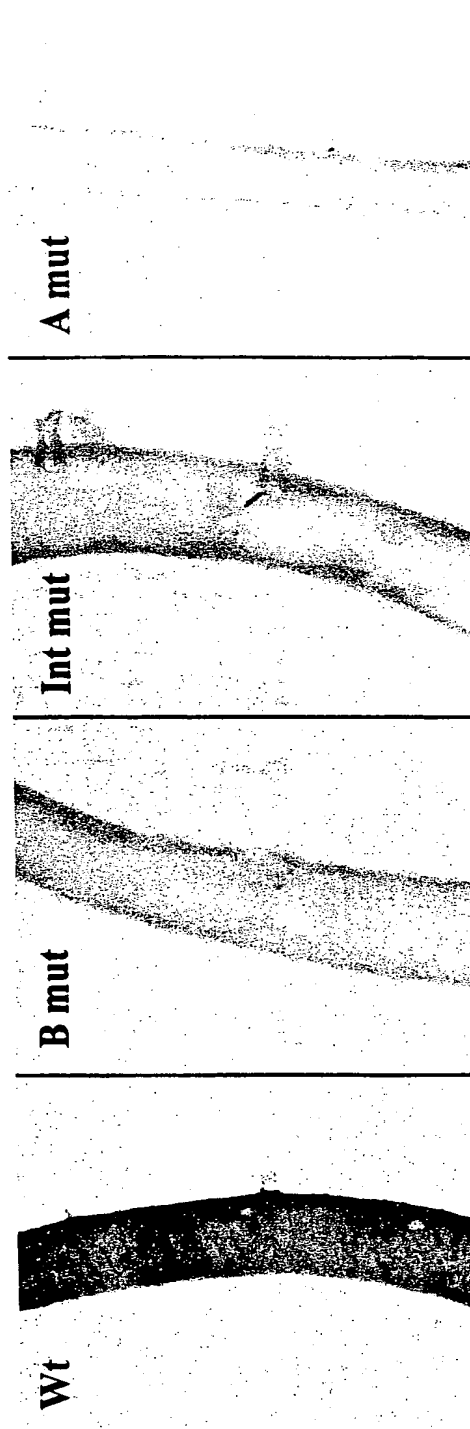


FIG. 8B

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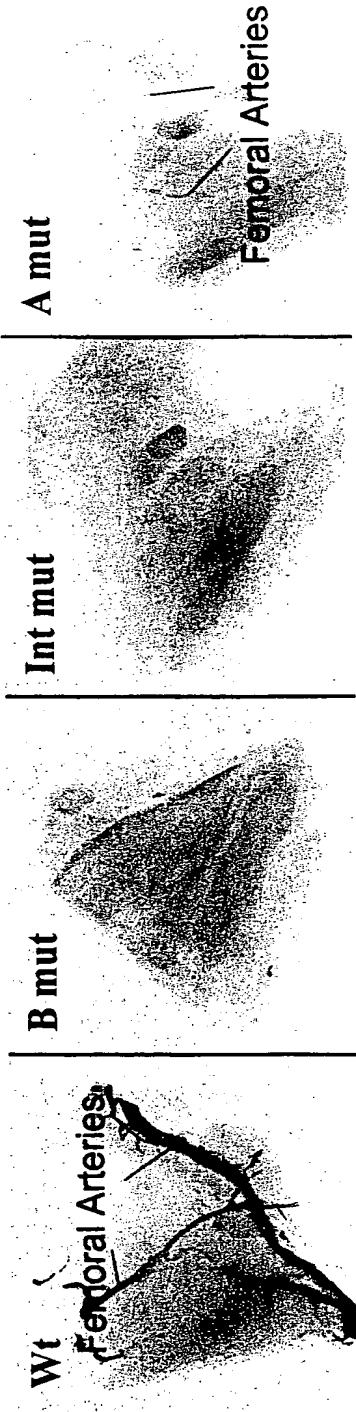


FIG.8C

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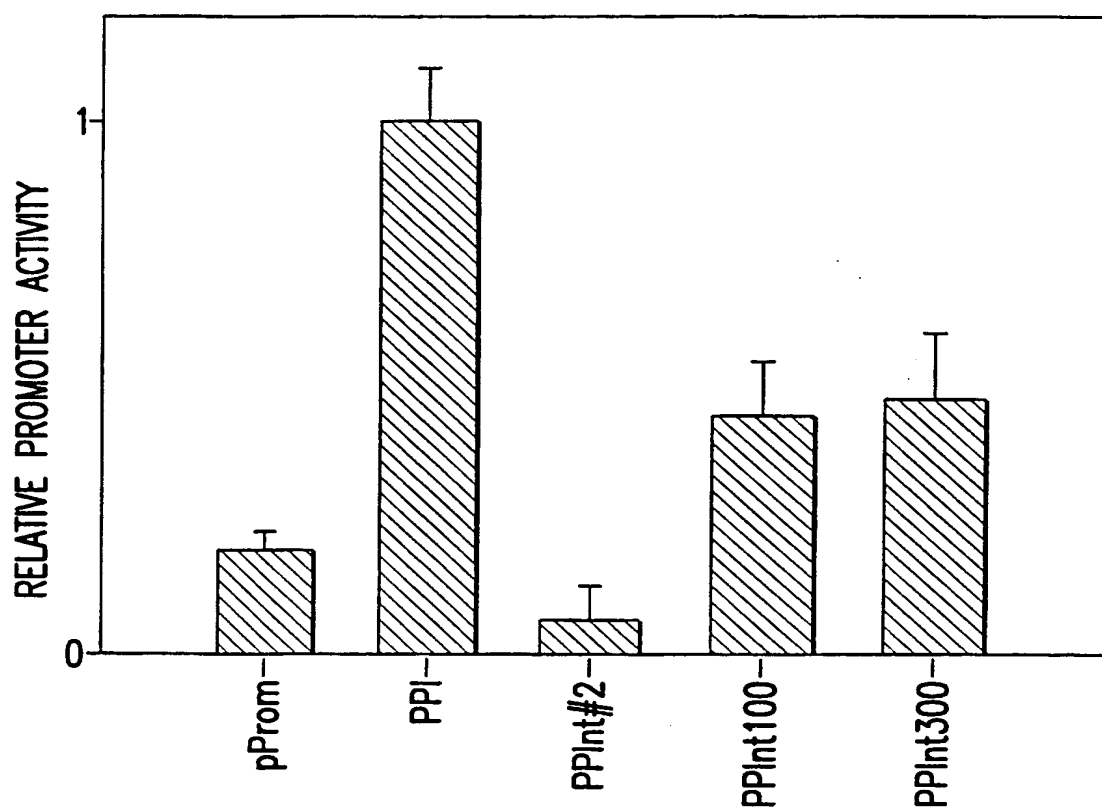


FIG.9

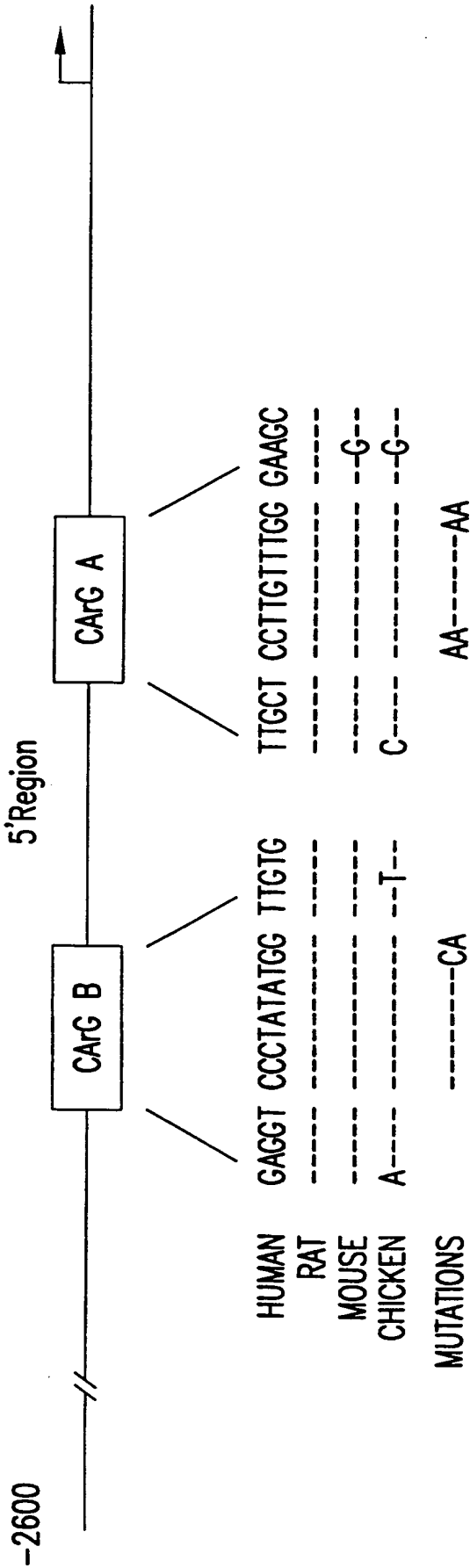


FIG. 10A

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~+1,100

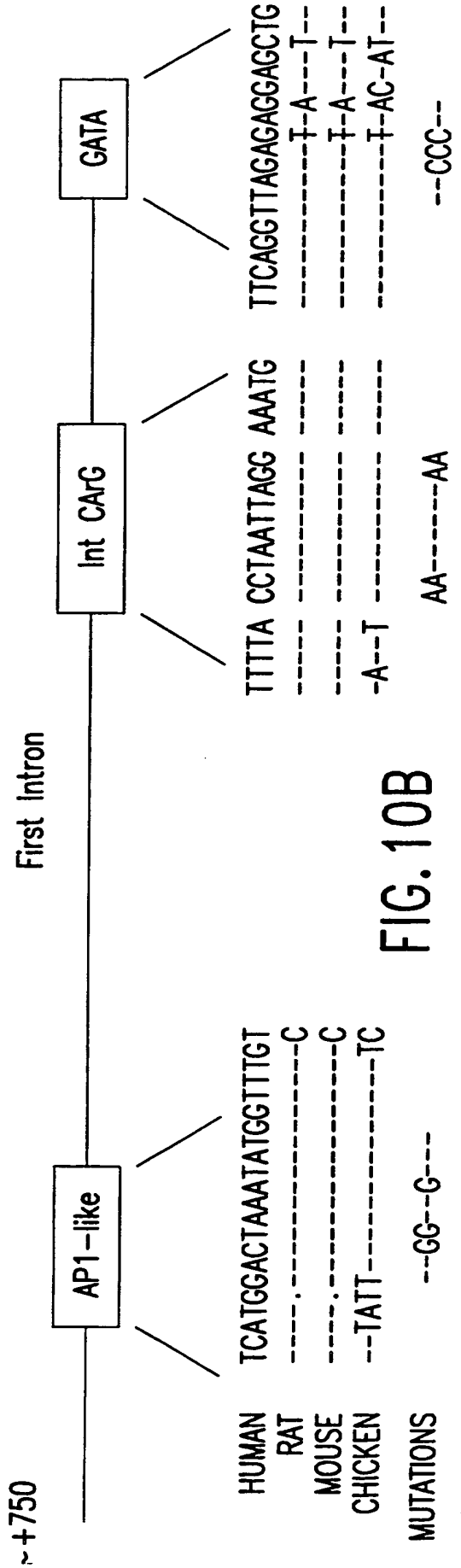


FIG. 10B

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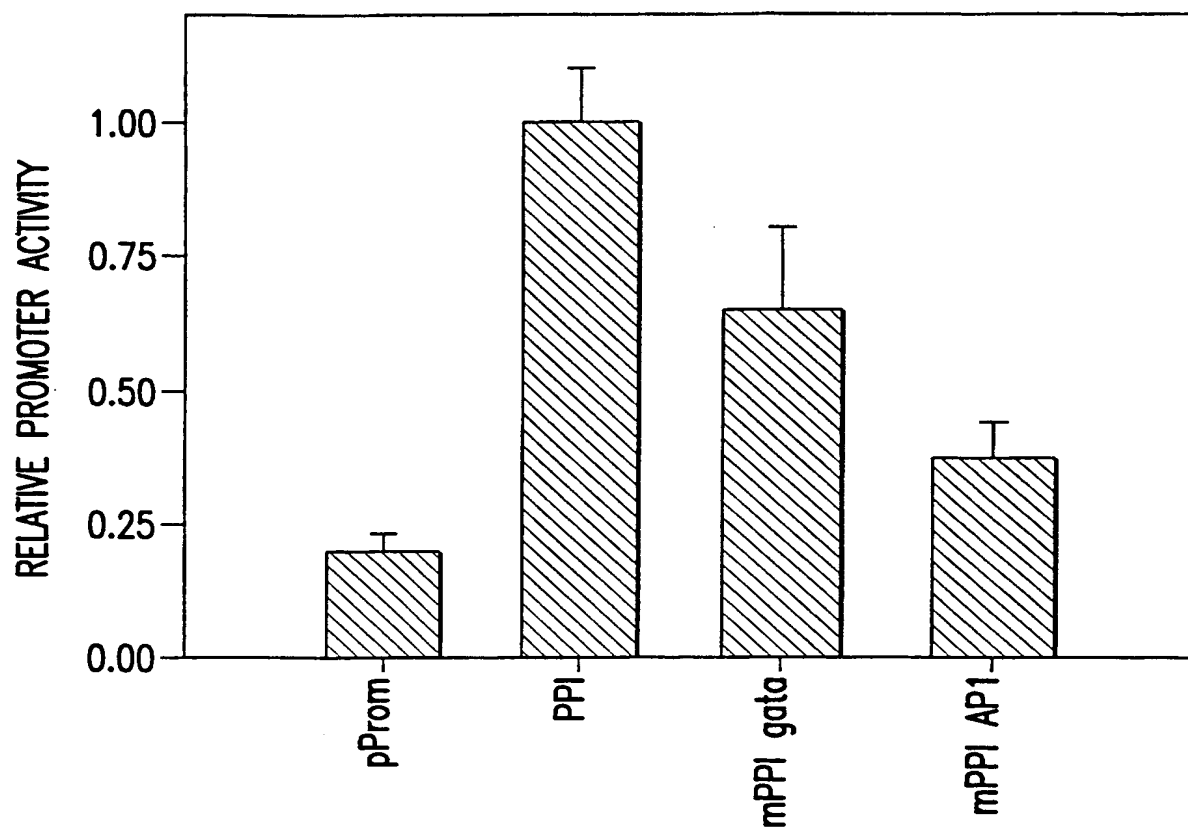


FIG. 11

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	1				50
human	-----	-----	-----	~AGAGAGCAA	GCAAGAGCAG
rat	-----	-----	~GACATGGT	AGCGTGAGTA	GACAGCTGCT
mouse	ACACCATAAA	ACAAGTGCAT	GAGCCGTGGG	AGCGTGAGTC	GACAGCTGCT
chicken	-----	-----	-----	-----	-----
	51				100
human	GGAAAACTGC	CTTATAAAAC	CATCAGATAT	CGTGAGAACT	CACTCACTTT
rat	GGCATTCAAC	CTGGGCTTTC	CCTGACATGC	CAACAGTTCA	GAGCCACT.T
mouse	GCCATTCAAC	CTGGGGTTTC	CCTAACATGT	GCACAGTTCA	GAAGCACTCC
chicken	-----	-----	-----	-----	-----
	101				150
human	CATGAGAACA	GCATGGTATA	AAACGCCCCC	ATCGATCCAG	TCACCTCCCA
rat	ATGGATCCGT	CTAAAATATC	TCCATCATGA	ATTGAATCAG	AACCTTGGCT
mouse	CAGAATCCAT	CCAAAATATC	TCTATCATGA	ATGGAATCAG	AACCTTGGCT
chicken	~GAATTCATG	GGCTTTTTGA	ATTTGTAGTG	GTTTGAGATG	GAGTTTGGAG
	151				200
human	CCATGCCTTT	CTCTGGACAT	GGG...ATTA	TGGAGATTAG	AATTCGAGAC
rat	TGCAGGAGGG	AAGTAGAGAA	AGGTAAAGTC	GTTGACTGTC	CATTGAAGCC
mouse	TGCAGGAGGA	AAGTACAGAA	ATGTAAAGTC	ACTGACTGTC	CATCAAAGCC
chicken	ATGCTAATTT	CTGATCTCTA	GTAGTAGTTC	AAGGGCAATG	TATTGTTACT
	201				250
human	GAGATTTGGG	TGGGGACGTA	GAACCAAACC	ATATCACCTG	GTCTCTCTA.
rat	AAAGAGCTGA	TGATGTCTTT	GAAGAATGG.	.....CAGG	GTCACCTTGAT
mouse	AACGATCTGA	TGCCTTTGAA	GAATGATAGG	GTCACCTTGAG	GTCACCTTGAT
chicken	GTGAAAGGGC	TGCTCATGAG	ACACAGTCTG	CCTAGAGAAC	AGCTGGCTGC
	251				300
human	....CTTCCT	GTCAAGGAGG	TTAGTGGGCA	GAGAGGAGGG	CTACAGAGGC
rat	CGCTCTTTCT	GTCCAGTGGG	CTCATAAACA	CGGAGGAGGA	TGAGCAGGCT
mouse	CTCTGTTTCT	GTCCAGTGGG	CTCATAGTCA	TGGAGGAGAG	TGAGCAGGCT
chicken	AGCCAAATAA	ATCCAGTCCT	CTGA.AAATA	GTCATACAT	TGAGAACCTT

FIG.12A

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301 350

human TTCCTTTGAA CAATCTCCTT TCTTTTCCAA A.....C TACTTCTTTG

rat TCATTTCAAC ATTTCAAAC TCTTTTACAA .....T TTTTTTATG

mouse TCATTTCAAC ATTTCAAATT TCTTTTACAA AGTTTTTTTT TTTTTTATG

chicken TGCTTTAGTT GCTAAAAATA TGCTCAGGGC AAAGCTAGCT AGAGGTTATG

351 400

human ACAGGCTGCT GGGTAGACTC TCTGGTCAAA GGATGGTCCC TACTTATGCT

rat ACGGGGCAAT GGGTCCTCTC TGTGGCCAAA AGACGGTCCT TAAGCATGAT

mouse ACAGGGTGAC TGGTGATCTC TGTGGGCAAA GGATGGTCCT TAATCATGCT

chicken AAATTCAGCA ACTTTATTAT GAATGTTTTG AGATAGGAGT TTACAACTTG

401 450

human GCTAAATTGC TCGGTGACAA ATTAGTAGAC AAAGCTAATG CACCAAAAAA

rat ATCAGGGGTC AGCGATAAAC CAACAACATG CACGTGGACT GTACCTAGGG

mouse GTTAAGGGTC AGTAAAAAGC CAGCAACATG CGGAATG... ....TTAAGG

chicken TGTCCATCAG TGAATTGAC ACTAGGATGA AGCTTGTTCA CAGTTCCTAG

451 500

human ATGAATGTAG TTATAGTAAT GCTAACATCC AAATTCCTCT TTGTAAGACA

rat GTTAACGCAG TTACAGTGAT TCTGACTTCT AAGTTCCTCT TAGGGTAACA

mouse GTTAAAGCAG TTACAGTGAT TCTGACTTCT AAGTTACTCT TTGGGCAACA

chicken TGCTTTGGAA ATAACTGAT GGAGACAGGA TATTGATTGT CACCCATTAC

501 550

human TAGGCCTGTC AACCTTGTCT CCATACTTC. ....A ATTCCTATTT

rat TAGGCTGGTG AATCCTGATT ACATACTTCC ATATGTAATA CATACAGACT

mouse CAGGCTGGTT AATCCTCACT ACATACTTC. ....A GTTCCTGGTT

chicken AGGCTAGGGG CACCATAACA ACCTGTTAGC AGAACGTTTA CACAGCCTTC

551 600

human CCA.CTCACC TCCCTCAAGA ACTTGATTTA TAA..ACAGT GTGCCTACCA

rat TCA.TTGATA CTACACACAG ACTCCA.GAC TACATACAAT GTGGCTTCCA

mouse TCA.TTACTA CAACACAAAG ACACAATGTA TAAGTACAAT GTAGCTTCCA

chicken AAAGACCCTA CCATGAACCC TATGCAACAG CAGGTACTTC TTTTAGTATC

FIG. 12B

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601 650

human TAAAATCATC ACTCCCTCTA TGTATTTATA GACGACTGAA GGAATATCTT

rat TAAAATGATC ACT.CCTCTG CAGATTCGCA GGTGAC.CCA AGCATCT.TT

mouse TAAAAACATG ACT.CCTCTG CATATTTATG GGTGACTCGA AGCATCT.TT

chicken CCCAAGTGCA GACCTTTTAA GTGAATTTGT GGCAAATTC AGTAGCTGTT

651 700

human TCTTCTTTGC ATGCTACCGT GGTAGAAGGA TTTTAAAAGT CCATGCTAGG

rat TGTTATAGGC TACCTTTTGC AACAG.TGTT GCCTTAAAGT CCCAGCTAGT

mouse TGATCTAGGC TACCTTTTGC AACAG.TGTT GCTTAAAAAT CGCAGCTAGT

chicken TAGCTTGCCG AAAGTATTCT CATTGCTTTG GTCCAAATCT TTAACAAATG

701 750

human CAGAGGCAGC CCTTTCTGCC CCTTTCTGTT CTCAGTTTAT TAGGAAATAG

rat CAGAGACA.. .....GGC CCTTCCTCAT CTCAAGCCCT TAGCTAATGG

mouse CAGAGACA.. .....GGC CCTTCCTTAT C.CAAGTCCT CAGCTAATGG

chicken CAAAGTGTCT CCTTAAAAAC ACTTTCCCTA TTACAAATGA CTGCTCTTTC

751 800

human CCTGAAATTC CAGCATGATA GCAA...CT. ....GGCATC CGTCTGTGAA

rat ACCCAAAGGC TAGCCTGACA GGAAGAGCT. ....GGCATC TTCTGAGGAA

mouse CCCAAAAGAC TAGCCTGACA G...GGGCT. ....GGCATC TTCTGAGGAA

chicken AGTTTTCACT CTGCCTCTTG GATGTTCCCTG TGAAGGCCAG GGCCTCTCTC

801 850

human TGTGCAAACC ATGCCTGCAT CTGCCCATT A CCCGTAGCTC AGTGTCTCTG

rat TGTGCAAACC ATGCCTGCGT CTGCTTCATG A CACTAGCCC AGTG..TCTG

mouse TGTGCAAACC ATGCCTGCGT CTGTCCCATG A CACTAGCCC AGTG..TCTG

chicken TCTTGTTTGA ACGTGTGCTC TTCCTGACAG AGGGTGTCTG TCCCAGGCAC

851 900

human GGCATTTCTG CAGTTGTTCT GAAGGCTTGG CGTGTTTATC TCCCACAGGC

rat GGCATTTGAG CAGTTGTTCT GAGGGCTCAG GATGTTTATC CCCATAAGCA

mouse GGCATTTAAG CAGTTGTTCT GAGGGCTTAG GATGTTTATC CCCATAACGA

chicken GCTTTTCTTG CTGCATTTTA GCAAGTTCTG CAGTGTTTAT CTTACACAGC

FIG.12C



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	901		950
human	GGCTGAACCG	CTCCCGTTTC	ATGAGCAGAC CAGTGGGAATG CAGTGGGAAGA
rat	GCTGAACTGC	CTCCTGTTTC	GAGAGCAGAG CAGAGGAATG CAGTGGGAAGA
mouse	GCTGAGCTGC	CTCCTGTTTC	GGGAGCAGAA CAGAGGAATG CAGTGGGAAGA
chicken	TGAAAGTCTC	CTCCTGTTTC	ATGAGCTCTG CGTTGGAATG CAGTGGGAAGG

	951		1000	CarG B
human	GACCCAGGCC	TCCGGC..AC	CAGATTAGAG AGTTTTGTGC TGAGGT	<u>CCCT</u>
rat	GACCCAGGCC	TCTGGCCACC	CAGATTAGAG AGTTTTGTGC TGAGGT	<u>CCCT</u>
mouse	GACCCA.GCC	TCTGGCCACC	CAGATTAGAG AGTTTTGTGC TGAGGT	<u>CCCT</u>
chicken	GACTGAGGGC	.CTGTCGACC	CAGATTAGAG GTTTTTGTAA TAAGGT	<u>CCCT</u>

	1001		1050	CarG A
human	<u>ATATGG</u> TTGT	GTTAGACTGA	ACGACAGGCT CAAGTCTGTC TTTGCT	<u>CCTT</u>
rat	<u>ATATGG</u> TTGT	GTTAGAGTGA	ACGGCCAGCT TCAGCCTGTC TTTGCT	<u>CCTT</u>
mouse	<u>ATATGG</u> TTGT	GTTAGAGTGA	ACGGCCAGCT TCAGCCCGTC TTTGCT	<u>CCTT</u>
chicken	<u>ATATGG</u> TTTT	GTTAGAGACT	TCGGCTCTGT CTCTCTCATC TCTGCT	<u>CCTT</u>

	1051		1100
human	<u>GTTT</u> GGGAAG	CAAGTGGGAG	GAGAGCAGGC CAA.GGGCTA TATAACCCTT
rat	<u>GTTT</u> GGGAAG	CGAGTGGGAG	GGGATCAGAC CAGGGGGCTA TATAACCCTT
mouse	<u>GTTT</u> GGGAGG	CGAGTGGGAG	GGGATCAGAG CAAGGGGCTA TATAACCCTT
chicken	<u>GTTT</u> GGGAGG	CTGGTGGGAG	GAGAAGAGCT GAAGGGGCTA TATAACCCTG

	1101	1118	
human	CAGCTTTCAG	CTTCCCTG	
rat	CAGCATTTCAG	CCTCCCC~	EXON 1
mouse	CAGCCTTCAG	CCTCCC~	
chicken	GTGCTTTTGG	ATACAC~	

FIG.12D

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1 50  
human ~GTAAGTGCG CCAGGCCAAG GATGTGACTT ATAGATTCCA GTGGCTCTTT  
rat ~~~~~~GTAAG GATGTGACTT AGAGTTTTCC CAGGCT.TTT  
mouse GTAAGTAGCC CCAGCCCAGG GATATGACTT CGAGTTTTCC CAGGCT.CTT  
chicken ~~~~~~

51 100  
human TAATTACCCG GTATAATAAG ACACCATCTG CAGGGATTG GCTGGGTTCA  
rat TAATCATCCA GTGGAACCAG ACGTTGTCTG TAGTAATCTG AATGACTCAC  
mouse TTATCATCCA ATGTAGCCAG ACATTGTCTG TGGGAATCTG AATGACTCAC  
chicken ~~~~~GTA AGTGGCACTG AACCAATAGT GGGATTTATA GTTTTCTGGA

101 150  
human TGCCTGATA TTTCTGAATG AAGA.TTGTA CTAATAAAAT GATTGTAGCT  
rat ATGTTtGGAA TTTGGGAATA AAGATTTATG CTGTTAAAT GATTGTAGCT  
mouse GTGTTTTGAA TTTTGAATA AAGATTTATA CTGTTAAAT GATTGTAGCT  
chicken TGACTTTAAT TAAGTAATGT CACATGGAAG CTATTCAGGA GGATGTACTG

151 200  
human .TTTG.GCTT TAATGATCTA ACGTTAAAGA CAGG..... .GCTAATAT  
rat CCTTA.GCTT GCATGATTTT GTATCTAAAC GGG..... .ACTAAAAAT  
mouse TTTTA.GCTT GCATGATTTT ACATCCGAAT AGGGCTGATT TACTGGAAAC  
chicken CTATGCTGCA GTTTGCTTAG GCATTACTTA CTAGAACTGA ATTGGTAAAA

201 250  
human GTAGTTTGGT ATGATGGAAG GGGTAGAGAA GA.ATATGAA AATTTTATTA  
rat GAATCGTGGT TTAATGGCAA AGGAGATGGA GAGGAAATTA AAGTTTGTTC  
mouse AACGCTTGAT TTAATGGAAA AGGAAATGGA TAGAAATTA AAGTTTGTTC  
chicken TACTTTCAAT GTCTACACTG AGTTGTATTT GTTTTAAAGC ACTTTTGAAT

251 300  
human ATGCATGTCT TCTGTAAAA. .TGTTTATCC TAAACAAACA GCCCAGATCT  
rat ATGCGTGGCA TCTGTGAAAT CTGTTTACAC TAAACCAACT GCTCGGATCC  
mouse ATGTGTGTCA TCTGCAAAAC CTGTTTACAC TAAACCAACT GCTCTGATCC  
chicken GGGAAATACG TCTGATGATT TTGCCGATTC CACCAACACT CCAACGGTAA

FIG. 13A

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301 350

human TGCAGCACAA TACAGGTATG CAGGTTAGCT GTGTGCAGTA AGTTATAC.A

rat CGCAGCCTAC TATAGGGGAG AAGTCCAGCC ATCTATGGTA AATTATAC.A

mouse CGCAGCGTAC TGTAGGGGTG GAGTCTAGCT GTATGTGGTA AATTATAC.G

chicken TATAAAGACA CAGACTGTTT AATGGCACAG CTGGAATTTA AGAGAACCTG

351 400

human TTTATTTGTA TTTAGGCACT GGAACTCAG ATTTCTTTCT GGTTCGTATT

rat TTTGTTTCTA CTTAGGTGTT GGACACTTGT GGATTTGTCT ATGGTTCA.G

mouse TTTGTTTCTA TTAGG..... CAAAAGTTGG AAACTTTGG ATGTATCATG

chicken TGTGCCCTG TGGAGTTAGC TTTGGACAGA ACAGAGTTCC TGAATGGGTG

401 450

human TGTTGTAGGG GTTTTCTTTC ACTGGGCTGT ATTTTGGTG CAGCTTAGGT

rat ACTTAGTGTG AGGACTTTCC ATCTGACCG. ....ACTA CAGCCGGGT

mouse ATGTAGCATG AGGTATTT.. .....AGTG CAGCTGAGGT

chicken AATTGCACA CTGTGTAGTG GTTCTCAGC AGCTTGCTT CAGTGCTCTC

451 500

human GTCTGGAAGT CGGA.TTTTG GAAGTGAACA GAAGAATAGT TGCCTAGTCT

rat AACTGGAAGT .GGA.TGTCA GGAGTGAAGT GGCG..CGGT TGCCTGCGCT

mouse AACTGGAAGT .GAA.TATCA GGAATGAAGT GAGG..TAGT TGCCTGCTCT

chicken AAAATCAGCT TAAATTGACG TAAGTGT TTTT GGAGTGTGAC TGCAAGAAGA

501 550

human TTGATTGTGC CTGAATTTGT GTATTCCCTT CTGGTTTCCC ..TGCTCTAA

rat CTGGTTTtGG CTGAGTGGAC TGC GTTGCCT CTGGGTTTCC GGGGCTCTAA

mouse CTGATGTTGG CTGAGTGGAC .GCATTGCTT CTGGGTTTCC GGGGCTCTAA

chicken GCTGGAAGAT GCAAAATAGC AGTATCTAAT CAGATGCAAT GAGGATGCAT

551 600

human CTGGTAGTGT CTTTTGTTGG AAATGTATAT CTCTTTTTTG TTGGAATGT

rat CAG..... .TAG ACATGTATAT CTT.....

mouse GAGCTGGTGT CCTATGCTGG AAATGTGTAT CTTGT.....GACT

chicken GTGTATTCAT TGCTGTCTCG ATAGATATGA AAGCTGTGGT CTGCAAAACG

FIG. 13B

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601 650

human GTATGTGTGA CCTTACAAGT TTGGATCTAC ATCATTGGTC ATTTGCAGC.  
 rat .....GTGC CCTTACGA.T TCAAACCTAT GTCATTGGTC ATTTGCAGC.  
 mouse GTGTTGGTGC CCTTACAA.G TCAGACCTAT GCCATTGGTC ATTTGCAGC.  
 chicken CCCAATATTT TATTAAAGAT CACATTATAC ACAGAGTTCC TTGTGAGGCT

651 700

human AGAGCGCAGC AGGTGACCTG CTGAATTTTT CTCTGGAAAG AAAGATTTAG  
 rat AAAGCATA.. .....G CTCCTCTACT CTCTGCAAAG AAA.....  
 mouse ATAGCATA.. .....G CTTTTCTACT TTCTGCAAAG AAA.....  
 chicken GGAGTTGTTT TCCTGATAGC ATGCTGTAGA GGCTGGGGAA GTGATTGGTT

701 750

human GGAGCAGAGC CTGCATCTGA CAGCTGTGTG TCCTCCCGGC CGGATATCTG  
 rat .....TG AGGAAGTGTC TCATTCCGGGA AGGATCT...  
 mouse .....GG AGGAAGTGTC TCATCCAGGG GAGATCT...  
 chicken GTCTTTTCAGT GTAAAGCAGG TAGAAGTAAG AGGCTAAATA CTGTATTAAT

751 800

human GTTGCATCTC CCTCAGCTTA AAGCTCCCTT CAGCCTGGTG AGGCAAGTGT  
 rat GA.TTGCGTT TCTCTGCCTC AAGTGTCCTT CTGGCCCTT A.....G.  
 mouse GATTTGCATT TCTCTGCCTC ACGTGTCCTT CAGCCGCTTA A.....GT  
 chicken TGCTGGGGTG AATATGTCCT TTATTCTGCA GTGTGAGTGA CTTTTGCTGC

801 850

human GACTGTGCAG CCAGCCCTGC CAACCCAGGC TGAGTTTCAC TGCAAATCAA  
 rat ....GCAGAA TCTCTGTGGG AGCCACC... .....C... ..CACTCAG  
 mouse ATCTGTGGAA CCAGCCTTGC CACCCCA... .....CAT TGTAACCTCAG  
 chicken TGGAGGATGT TACTACTGCA TGCCATGGCA GTCCTTGAGC TGTAACCTCAC

851 900

human GGTTTGGCAG CTTCAGCCCA G.ACTGGAGT TTTTCATGCTG AGATTTTCCT  
 rat GACTTGGTAa CTTCTGCAGG GAAACGGAGT TTTCTCGATA AGATTTTCCT  
 mouse GGCTCGGTAG CTTTCATCAGG G.AATGGAGT TTTCTCGATA AGATTTTCCT  
 chicken TCCTTGGAAG AGAGTGTCTT GCCTGAATGA TTTAGCTTTG ATTTTTCAGC.

FIG. 13C

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901 950

human AGCATTTTGT GTTTCATGGA CTAAATATGG TTTGTGTTTC AAGACCAATG

rat CCCcTTTGT GATTCAT.GA CTAAATATGG TTTGCGTTTT GAGACTCACA

mouse CCTGTTTTGT GATTCAT.GA CTAAATATGG TTTGC.ATTT GAGACTCATA

chicken ....TTTTTG TGCTCTATTA CTAAATATGG TTTTC.ATTA GAGTCCTCCA

951 1000

human AGCT.GGGAA CTGTACTGTT CTTTC.....C CCTCCCATCA

rat AACTGGGGAA GGTTACTGTC CTTTCCTCCT CCCTCCCCTC CCCTCTTACA

mouse AGCT.GGGAA GGGTACTGTC CTTTCCTCCC TTCCCCCCTC CCC.CCAACA

chicken AGCTAGAAA. ...TGCAGCC TTTTCCAGCT CCCTCCTCTC CCCTCCCCCA

1001 1050

human ACTCATTTTT GGCACAAGAC GCACTCTAGT CAGTTGGAGC AAA..CCCCT

rat ATTCATTTTT GGCACAAGAT GAGCTCCACT GTGCTGCACC AAACCTCCCCG

mouse ATTCATTTTT GGCACCAGAT GAGCTCCACT GGGCTGCACC AAACCTCCCCG

chicken AGTGATTTTT GGCATTGCAT TCTCTGCATT G.GTTTGAGC AAACCCCTG

1051 1100

human GACCCGGGTG CAGTTCCAAA AGCAGACACT CGAGC..... GTGTTTTACC INTRONIC

rat GCCTCGGGTG CAGTTCCAAA AGCGGACGCT GGAGCCCAGT GTGTTTTACC CarG

mouse ..CCCCGGTG CAGTTCCAAA AGCAGAGGCT GGAGCCCAGT GTGTTTTACC

chicken ACCTCGAACT CTGTTCCAAA AACAGACGGT TG....GAAA GCATATTTC

1101 1150

human TAATTAGGAA ATGCT..TTG CTCCAAACCG AA.CTGCTCA TTCAGGTTAG

rat TAATTAGGAA ATGCTCCCTG CTTCAAACCTG AAGCTGCTCC TTCAGGTTAG

mouse TAATTAGGAA ATGCTCCCCG CTTCAAACCG .AGCTGCTCA TTCAGGTTAG

chicken TAATTAGGAA ATGGTTTC.. ..TCTAAACC ACTCTGTTCA TTCATGTTAG

1151 1200

human AGAGGAGCTG TAAACCACTG AGCTCGACTC TTTCCGGGGA CACAGTGACT

rat ATAAGAGTTG CAAACCACAG CGGCAGTTTC .CTCTGGAAA CACACCGACG

mouse ATAAGAGTTG CAAACCACAG CGGCTGCGTC .CTCTGGAAA CACACAGACT

chicken ATAACAATTG TACTCCATAG ACTAAATGCT TAAATATAAA GAGCCTGTTT

FIG.13D

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1201 1250

human TCTTCAATGA CAGTGCTCCT TTTGGACATT ATAACATTCT TCCTAGATTT

rat TCT.....TCTC TAGTGACGAC GCTCCTTTCA AAGCTTATTA

mouse TCT.....TCTC CAGTGACAAG CCTCCTTTCA GAGCTTAATA

chicken TCCCAAAGT TTAAGAAAGT GCGAAAATT GCAACCTACT TTCCTTTTCT

1251 1300

human TC..TTTTTC TTTTCTTTT TTTTTTGGCC AAGTAAAAAA CATTTTTCTG

rat AG..ACA..T ATTTTCTGGA TATTTTGGAT GAAGTAGAAA TACGTCTTTA

mouse AG..ACAATT TTTTCTGGA TATTTTGGAT GAAATAGAAA TACATCTTTA

chicken GGTAATAATG ACTTAATATC TGGAGTACAT CAACGTGGGA TTTCCCTCTC

1301 1350

human CATTCTTGCT GATGCTGAGG GCCAGTCTCC TTTTCTGAG TATAGTCAAC

rat CTGAATTAG..TGATTTT ACTTGCATT TAAAAAAA CTAGGAAGCT

mouse CGGAATTTGA CAGTATTTT TCCTGCATT TTTTAAAAAC CAGGGTAGCT

chicken CATGCCTTCT CCTGGCAGCT AC.TGTATCC ATCGAGAACT GCAGCCTGAG

1351 1400

human CCCTCCTCCC AAGCCATCAC TGCCCAACAA AACAGTTATT AAAAATATCC

rat TATTTCTCTG AATATACTAA GGCACAACCT TAAGTCATCC TGCCCAAC..

mouse TATTTTCTG AATATACTAA GGCACAACCT TAAGCCATCT TGCCCAACAA

chicken AAGCAGTCCA CAGCTGCGTG CTCGTGGCTG TGAAGGGTCT GCAGTGAGAG

1401 1450

human CACATTCATG GTAACCATAC CTTC.....CCATTTTC AGAGACCATC

rat ..AGTTTATG TGGGTTATCC TTCC.....CCGTTTTC AAAGGGCATC

mouse AAAGTTTATG TGGGTTATCC TTCC.....CCATTTTC AGAGGGTATC

chicken GCGTTTGGGG GAGGCTGTCC CTCCTAGGTC CATCTATGGT GGAGGCTGAA

1451 1500

human CTAATTTGAA ATGTTTTATC CTCTTTTCAG CCCTTACTTT TGGTTTGGAA

rat CTAATTCGA GTGGTTTATC TCATTTGCAG CCCGGATGCT ATGTTTGGAA

mouse CTAATCCAA GTGGCTTATC CCATTTGCAG CCCTGGTGCT AAGTATGGAA

chicken GCGTTGCCTC ATGCTCCCAT GCTCAATCAG CCATGGCTCT CACTGACGCG

FIG. 13E

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1501 1550  
human AATGCACTTA GCACATCCAT AGAGTGCCTG CTTATCCCCT GGGGCTGGCT  
rat CA....GCA GGCTTCCTGT AGACTCTCTG CTGGTCCTTT GCTGCTGGCT  
mouse AACAGGCTTA GTGGACACAC AGACTCTCTG CTGGTCCTTT GGTGGTTTCT  
chicken CACTGCCGCT TCGACGTGCA CGCCAGCAGG CCCATGGCAG CAGGTTTTGA

1551 1600  
human GCTTCTGACA GATACCCCAG GCTCTTAGGC TTCTTCCCTT TTTTCTCCTT  
rat GCCTCTGCCA aTCACC.... .....TGGC TGCTGTGCCT CTCTGTGCTT  
mouse GCCTCTGCCA GTCACC.... .....TGGC TTCTGTGCCT CCTTGTGGTT  
chicken TCGTTCGCGA GGAGCCAGCT GGGCTGCTGG ATGACAGCCT GTCTCGCTTT

1601 1650  
human TATAGTTCTC GCCTCTTTTC TAAAGCTTCT TAATCTGCTC TGAGGGAAGC  
rat TGAGACTGTC TTCTGAGTCT TTATCGTCC. .ACTGGAAAG GAAGCTAAAT  
mouse TGAAACTTTC TTCTGAGTCC TTATCATCC. .ACTGGAAAG GAAGCTAAGT  
chicken GGCTGTAAAC ACATTGCAAT TTGTTGACCT CTGCATGGAA GTCCAGGCTC

1651 1700  
human CAAATCACAG GAATGCCAAA ATAATTCAGC ATCTGGAAAG GGAAAAGAAG  
rat ATAAATTCAG TGTCTGAAAG AAGAGGCAGA GTAGAGAGAG GAAAGAGCAA  
mouse ATAATT.... ..... CAGAGGCATA GTGGAAAGAG GAAAGAGCAA  
chicken CCAGCTAGTC GAGTGATTCC CTAACACACT ATAAATTGTG GGCAAATAGT

1701 1750  
human GGTGGGAAAG GAAAGGGCAA GCCATTCATG AGTCCCATGT CCATTCTTGC  
rat ACCAACCAAG ATCCCATTTT TCCGTTCTTG TGAGGGGAAC CCAGGCATTG  
mouse ACTGCTGAAG AAAGGGATTT TCCATTCTT GCAAGGGGA. .ACACATTG  
chicken TCTCCTCGAG TGCTGGTATT CGGGGCTTGT TTCCGTAATT GACTTTAATA

1751 1800  
human AAGTGGAATC CACACGTTGA TTATTTTAT TCTAAGCCTG GAGCAGTGTG  
rat AA...GATTT CACTCTGATT TTGGAGGCAG GGTTTGAAAG GAAACCAAAA  
mouse AA...GATTT CACTCTGATC TTGGGGACAG GG.TTGAAAG AAAACCAAGA  
chicken CAAACCCTTT AAAGCATTTT TATTACCCTT GTTATCTTCC TGTTCCTGA

FIG. 13F

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1801 1850  
human GAAAGAAAGC AAAGGTTAGA AACAAAGAGT TCTGG..... .ATACTGAAA  
rat TCACAAACAG AATCTCTGGG TAAAGACAAT AGTCA..... .CATGGTGAG  
mouse TCGCAAACAG AATCTTTGGG TAGGGATAAT AGTTA..... .CTTGATGAT  
chicken GGAGAAAAAC AATTTCTGTT TTAGTGAAGC AGGGAGCCAG CATAAATTAC

1851 1900  
human ATAATCACAC AGTGATAGTA ATAATAATGA TGATGAAATT AGTATTTATT  
rat ATCGACAAGC AATGCTTGT. ACAATGCCCT TGATGTCCCC cGAAGCTGTC  
mouse ATCCACGCGC AATGCTTGT. CCAACACTCT GGATGTCCTT TGAAGCTCTC  
chicken TTTGTCATTC TACAAATGCA GCTTATTAGC TGGTTTGAAA TGATGATGGA

1901 1950  
human GAGAACTTAG AGTATCTCTG CCACTATAAA TTATTTTAAA CACTTTAAAA  
rat GAAAACACAA GCTTAAATGT CAATTACTTA AAATGCTATT TTA...AGCC  
mouse AAAAATCCAA GCTTAAATGT CAATTCCTTA AATTGTTGTT AAAACAACC  
chicken GCACACACTA TGGACAGTTT CAAAACACAT GCTGTCCTTG ATTGCATTTT

1951 2000  
human AACCCAATCT CTATAAGAAC TCCATGAGGT ATGTCCTGAT ATCATTACTG  
rat CAAAAGAGTA TGTGCTCAGT TAGTCAAGGT TAGAAGAAAT ACCAGAACTC  
mouse CTAAGGGGTA TATACTCAGT TAATCAAGCT TAGAAGAAGA TACCAGAGCT  
chicken AAAGTCAGGA TATCATCTTT CTACGTGCAC CAGTCTTGTC AGGATGATAG

2001 2050  
human TTTTATAGTA AGGAAATTGT GGTTTAGAGA TGTTAAATAA CTGAAATCAC  
rat AGGGGAGGAA AAAATATtTA TAAACCTGA TACTTGCCAC TTCCAAAGAA  
mouse CAGGGAAGAA AAAAAGTCTA CAAAAGCTGA TGCTTGCCAC TTCAAAGAA  
chicken AGGCAGGGGA CATCATACTG AATCTGATGC AAAGAGACCT TTGTTTTTGC

2051 2100  
human ACAGCTTTTA ACTGTTGGAG .CCTGGACTC AAATCCAGGC TTTCTGACTT  
rat CCCCAGTAAA TATTTTGGAG AGAATAAGTA AGCTTTGGGG GTGAGGGAGT  
mouse TCTAGTAACA ...TTTGGAC AGAATAAGTA AGCTTTGGG. ....TA  
chicken AGCTGTCAGT CCAGCAGTCT TCTTTATCTC CCACCTACGC CTCAGTGGTG

FIG. 13G



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2101 2150  
human CAGAGTCTAA GCTCATAATC ATGTGATCTG AAATCTTCGT TGTCCCTAAAT  
rat GGGGGGCAAT TCACTTTTTA TTACGGTCAT ATTAAGTTTC TTTCTGTAAC  
mouse GAGGAACAAC TCACATTTTA TTAAGGTCAT A.TCTGTCTC TTTCTGTAAC  
chicken GATTTCCGTG GCCGAATTTA .GATAAACAT TCGCTGTCTC AAAGCTGTAA

2151 2200  
human GTATCAGTTC AAGGCTCTTG GACAAGTCAC TTCAACTCCT TAAGCCTTGG  
rat TTATCAGTCT TAAG..TAAG AATAGCTATT ATCATCCTGT TGGGTTTTCA  
mouse TTATCAGTCT TAAA..CAAG AATAGCTCTC AGCAACCTGT TGGGTTTTCA  
chicken TGATCTGTCT TTCCATGCAG CAGGACTGGA ATAGTTCCAT GGAGTACTTT

2201 2250  
human TTTCTTGTC AGCTGAAGAT AATATTACAT GCCTTGACTT TAAAATATGT  
rat GCTTAGCAGT GATTTTGATT AATGAGGAAA TGTTGTAAaT CCTAAAATTG  
mouse GCTTAACAGT GACTTTAATA AATGAAGAAA TGTTATAACT CGTAAAATTT  
chicken GAATTATGTC TGGTGCATAC AGCCTTCCTG CCTATCAGTT CCTTTTATAC

2251 2300  
human CATCTCAATT GCAGTTTTAT GTTCTTTGCA AAGAGTTATT TTACATGAAG  
rat CAAACTCCCC CATCAAAAAT TTtCAATCCA ATATTtTTTA CTAGAGTAGg  
mouse CAAAC.ACCA TATTTGGAAA TTTCTATCCA AGTTTCCATA TTAGA.....  
chicken CGCATTCTCT GTCTTACAGG GTGGTTCTGG TACCTCACTT TGTTGTTTTT

2301 2350  
human CACTGCTAAG GAAGTTTTAG GCCTTTGGCA AGATGCAGGT TTGATTTTGT  
rat ACTTGgTAGC CTTTCAACTT GTGATCtTCC TGCCTCAGCT TCCCAAGTGg  
mouse .....CCAGC TCCTTAACTT GTGATCCTCC TGCCTCAGCC T.CCAAGTGC  
chicken TTTTCAATTA TTCTTTTCTT GCTGTTTCCA TAG~~~~~

2351 2400  
human GGGAATGTTT TGGCAGAACT CCAACTC... ..TGTAATAG CTATTTTATT  
rat TAGGATCACA GGTCTACATC ACCACGCCCC GTCTTGATTG ATGTCTAATG  
mouse TAGGAT.ATA GGTGTACATC ATCACACCCA GCCTTGATTG ATATTTAATA  
chicken ~~~~~~

FIG. 13H

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	2401				2450
human	TCCCTACTTC	TCAGATGTTT	CCTTAAAAGA	ACTGCCTTTT	TTATATGGAT
rat	CCACACCAGC	ACCcAAGTCT	TCAGAGACAA	AAGATTTTTTC	TTTTAAACAT
mouse	CCTCACCGGC	TCACAAGTCT	TTAGAGCCAA	AAGTTTTCTC	TTTTAAACAT
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2451				2500
human	TTGGAGGTGC	AATCAGTTAA	CCCATTTAGA	AGAAGAAATT	TTCTCAATTT
rat	TTAATATGAG	CAAACATTTT	AACATTCTCA	TATGCTGCCC	ATTATTCCAA
mouse	TTAATATGAG	TAAACATTTT	AACATTTTCA	AATTCTCACA	TGCTGCCCA.
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2501				2550
human	GAAATCCTAA	TTGAGATCTC	AATGCCAGGC	AGATAACTCT	GGGTGTCCTT
rat	AATCTACCTT	TTTGGGGGAA	AATATATTTT	ACCAAAAAAA	AAAGTGACTT
mouse	.....	.....	.....	.....	.....
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2551				2600
human	CTCTTAACGG	AACATTTTGA	CCTAATTGTG	ATTAGAAAAG	TGGAAGAGGT
rat	TGGTTTGATA	TAGATAACAA	ACCTTGGTTT	GATATAGATA	ACAAACCTTT
mouse	.....TTCCT	TGAAAATCTA	CCTTTGGTGG	GGGGGGGGGG	GGGACTATAT
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2601				2650
human	CTTGAAGTGG	AAGCCAAGGG	GTGGCTAAAG	AGTACCT...	GATGTCTGGC
rat	CTAGATAGTT	CTTTAACATG	TGgTATCACT	ATTCCCTATA	GACCTGTGTT
mouse	ATATATA...	.....	.....	TGTCCCTATA	GAACCTGCT
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2651				2700
human	TGGAGCTCTC	CTCTAATGCC	CTGTGTGCCC	TTGAGCAATC	ACTTCCTGAT
rat	CTCCACTCAG	GACCTCTCAT	CTGTGCTCTG	TGGCCTGTTC	ACACACTAAT
mouse	CTCTACACTG	CATCTCTCAT	CTGTGCTCTA	TGATCTATTC	ACACACTAAT
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~

FIG. 13I

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	2701				2750
human	TTTCTTATTT	G..TGAAAAT	GAGAGCATTG	GATGAAAATG	TCCTCTAATA
rat	GCTCTGCCCT	GCTTGAGAGT	GgTAAAAGAG	CCTGTGA.GC	TCCTGCTCTT
mouse	GCTCTGACCA	GCTTGAGAGT	GTTATAAGAG	CCTGTGACAC	TCCCGCTCTT
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2751				2800
human	TGCCTTCAAT	TTCTCAAATT	TGTAAGTTGA	TAGGCTGCTC	CAGCCTTTCT
rat	TGTGCTGAGG	GCTTGTGGTG	CTAACCTGGA	AGTCAGGGTT	TCAGCTCATC
mouse	TGTGCTGAGG	ACTTGTGGTG	TTAACCTGGA	AGTCAGGGTT	TCGGATCATC
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2801				2850
human	AATTTTATGA	AAGGATCCAA	GTATAAGATC	CAAGTATAAA	ATGG~~~~~
rat	AAAGGCcTTA	CAGTCTGGTG	AAAGCATTTT	AAGATAAAGA	GTGTTAGTTG
mouse	AAAGGCTTTA	CAGCCTAGTG	AAAGCATTTT	AAGATAAAGG	GTGTTAGTTG
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2851				2900
human	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
rat	AGATCTGGGG	AGAGCGTCCA	GCTAAAATAA	CACAACAGGG	CCAAGAACCC
mouse	AGAACTGTGG	AGAGCCTCCA	GCTAAAATAA	CACAACAGGA	CCAAGAACCC
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2901				2950
human	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
rat	TGGTTGTGGT	TGGGAGTGAC	CGTAGGCTCC	GGCCAAACGC	~~~~~
mouse	TGTCTGTGGG	TGGGAGTGAC	..TAGGCTCT	AGCCAAATGC	TCTGCGCTAC
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	2951				3000
human	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
rat	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
mouse	AGTAGCTTCT	CGCTCGCTGT	CTCTGCAGAA	CCCTGAGACG	CTGCTCCAGC
chicken	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~

FIG. 13J